

What is claimed is:

1. A magnetoresistive device substructure used for manufacturing a magnetoresistive device incorporating: a magnetoresistive element; and a soft magnetic layer covering the magnetoresistive element and having at least one of functions of introducing a signal magnetic flux to the magnetoresistive element and inducing a bias magnetic field thereto, the substructure comprising:

the magnetoresistive element;

the soft magnetic layer; and

an indicator having a shape similar to the magnetoresistive element and located in a specific position with respect to the magnetoresistive element.

2. The magnetoresistive device substructure according to claim 1 wherein the indicator is a dummy element having a configuration similar to that of the magnetoresistive element and being incapable of functioning as a magnetoresistive element.

3. The magnetoresistive device substructure according to claim 1, further comprising a dummy layer located in a specific position with respect to the soft magnetic layer and located off the indicator.

4. The magnetoresistive device substructure according to claim 1, further comprising an overcoat layer covering the soft magnetic layer and having an opening located in a portion corresponding to the indicator.

5. The magnetoresistive device substructure according to claim 1 wherein the indicator is located in a position at which the substructure is divided to fabricate the magnetoresistive device.

5 6. A method of manufacturing a magnetoresistive device substructure used for manufacturing a magnetoresistive device incorporating: a magnetoresistive element; and a soft magnetic layer covering the magnetoresistive element and having at least one of functions of introducing a signal magnetic flux to the magnetoresistive element and inducing a bias
10 magnetic field thereto, the method comprising the steps of:

 forming the magnetoresistive element and an indicator having a shape similar to the magnetoresistive element and located in a specific position with respect to the magnetoresistive element; and

 forming the soft magnetic layer in a specific position referring to the
15 position of the indicator.

7. The method according to claim 6 wherein the indicator is a dummy element having a configuration similar to that of the magnetoresistive element and being incapable of functioning as a magnetoresistive element.
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8. The method according to claim 6 wherein, in the step of forming the soft magnetic layer, a dummy layer is formed at the same time as the soft magnetic layer, the dummy layer being located in a specific position with respect to the soft magnetic layer and located off the indicator.
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9. The method according to claim 6, further comprising the step of

forming an overcoat layer covering the soft magnetic layer and having an opening located in a portion corresponding to the indicator.

10. The method according to claim 6, further comprising the steps of:

5 forming an overcoat layer covering the soft magnetic layer and the indicator; and forming an opening of the overcoat layer by selectively etching a portion of the overcoat layer that corresponds to the indicator.

11. The method according to claim 10, further comprising the step of

10 forming a film for stopping reactive ion etching on the indicator prior to the step of forming the overcoat layer, wherein

the opening is formed through the reactive ion etching in the step of forming the opening.

15 12. The method according to claim 6 wherein the indicator is located in a position at which the substructure is divided to fabricate the magnetoresistive device.

13. A magnetoresistive device comprising:

20 a magnetoresistive element;

a soft magnetic layer covering the magnetoresistive element and having at least one of functions of introducing a signal magnetic flux to the magnetoresistive element and inducing a bias magnetic field thereto; and

an indicator having a shape similar to the magnetoresistive element
25 and located in a specific position with respect to the magnetoresistive element.

14. The magnetoresistive device according to claim 13 wherein the indicator is a dummy element having a configuration similar to that of the magnetoresistive element and being incapable of functioning as a magnetoresistive element.

15. The magnetoresistive device according to claim 13, further comprising a dummy layer located in a specific position with respect to the soft magnetic layer and located off the indicator.

16. The magnetoresistive device according to claim 13, further comprising an overcoat layer covering the soft magnetic layer and having an opening located in a portion corresponding to the indicator.

17. A method of manufacturing a magnetoresistive device incorporating: a magnetoresistive element; and a soft magnetic layer covering the magnetoresistive element and having at least one of functions of introducing a signal magnetic flux to the magnetoresistive element and inducing a bias magnetic field thereto, the method comprising the steps of:

forming the magnetoresistive element and an indicator having a shape similar to the magnetoresistive element and located in a specific position with respect to the magnetoresistive element; and

forming the soft magnetic layer in a specific position referring to the position of the indicator.

18. The method according to claim 17 wherein the indicator is a dummy

element having a configuration similar to that of the magnetoresistive element and being incapable of functioning as a magnetoresistive element.

19. The method according to claim 17 wherein, in the step of forming
5 the soft magnetic layer, a dummy layer is formed at the same time as the soft magnetic layer, the dummy layer being located in a specific position with respect to the soft magnetic layer and located off the indicator.

20. The method according to claim 17, further comprising the step of
10 forming an overcoat layer covering the soft magnetic layer and having an opening located in a portion corresponding to the indicator.

21. The method according to claim 17, further comprising the steps of:
forming an overcoat layer covering the soft magnetic layer and the indicator;
15 and forming an opening of the overcoat layer by selectively etching a portion of the overcoat layer that corresponds to the indicator.

22. The method according to claim 21, further comprising the step of
forming a film for stopping reactive ion etching on the indicator prior to the
20 step of forming the overcoat layer, wherein

the opening is formed through the reactive ion etching in the step of forming the opening.

23. The method according to claim 17 wherein the indicator is located in
25 a position at which a magnetoresistive device substructure used for manufacturing the magnetoresistive device is divided to fabricate the

magnetoresistive device.

24. A micro device including a first patterned thin film and a second
patterned thin film covering the first patterned thin film, the device further
5 comprising:

an indicator having a shape similar to the first patterned thin film and
located in a specific position with respect to the first patterned thin film.

25. A method of manufacturing a micro device including a first
10 patterned thin film and a second patterned thin film covering the first
patterned thin film, the method comprising the steps of:

forming the first patterned thin film and an indicator having a shape
similar to the first patterned thin film and located in a specific position with
respect to the first patterned thin film; and

15 forming the second patterned thin film in a specific position referring to
the position of the indicator.